Climatological Data for December, 1910.

DISTRICT No. 11, CALIFORNIA.

Prof. ALEXANDER G. McADIE, District Editor.

GENERAL SUMMARY.

December will be long remembered as a dry month. The weather was unusually pleasant, but unfavorable for farming operations, as the ground in most places was too dry for plowing. With the exception of the two rainy periods from the 2d to the 4th and from the 8th to the 11th, the month in most places was without rain. There was a period of from 15 to 20 days without rain in the central counties. The month was quite unlike December, 1909, which was one of frequent and heavy rains. The average rainfall for December is 4.14 inches. Last year this amount was exceeded by 70 per cent, while during the present year there was a deficiency of more than 50 per cent. Last year there were heavy frosts at frequent intervals; this year there were less than the usual number and for the most part the frosts were light. The mean temperature was 1.6° above the normal and was the highest mean in three years. A well marked Foehn effect was noticeable in the section south of the Sierra Madre during the last week of the year, the afternoon temperatures rising above the 70° mark, due to the passage of air from the north over the range. Night temperatures were low, owing to rapid radiation through the clear, dry air. An average rate of fall at such times is from about 76° at 3 p. m. to 32° at 7 a. m.

The month began with a promise of rain in the central and northern counties, and by the 3d rain had fallen over the entire section north of the Tehachapi. A quick return to dry weather conditions followed, with heavy frosts in the Sacramento Valley and much tule fog in the San Joaquin. The second rainy period began about the 6th and resulted in unsettled weather with light rain in the northern and central counties until the 9th. A peculiar condition began on the morning of the 10th. An area of high pressure passing rapidly eastward over Oregon caused rain from Fresno north, notwithstanding the winds were north or northeast. The rain preceded a small disturbance which appeared off the northern coast of California, and continued during the passage of this depression across the State, ending December 12. This was during the prevalence of an area of high pressure that practically extended from the Atlantic to the Pacific. Ordinarily such a pressure distribution means fair, dry weather, with northerly winds. The cause of the rain on December 9 to 11 is not easily explained.

From the middle of the month to the close the weather of the Pacific slope was practically controlled by an area of high pressure extending from the Valley of the Colorado northwestward to British Columbia. A small disturbance formed on the 20th southwest of the high, and rain fell in the southern counties for a period of 36 hours. Fine weather prevailed during the holiday season, with clear days, warm afternoons, and moderately cool nights.

TEMPERATURE.

The mean temperature for the State was 1.6° above the normal. The following table gives the mean temperature for California during the time for which such records have been kept:

Year.	Mean.	Departure.	Year.	Mean.	Departure.
	°F.	°F.		°F.	°F.
1897	44.4	−1.8	1904	47.2	+1.0
1898	44.4	−1.8	1905	45.3	−0.9
1899	45.8	−0.4	1906	47.3	+1.1
1900	47.3	+1.1	1907	48.3	+2.1
1901	47.4	+1.2	1908	43.2	−3.0
1902	46.6	+0.4	1909	43.3	−2.9
1903	48.0	+1.8	1910	47.8	+1.6

The highest mean temperature was 59.8° at Los Angeles and the lowest mean 26.8° at Tamarack, Alpine County. The highest temperature was 87°, which occurred at San Bernardino on the 2d, Barstow on the 3d, and Ojai on the 5th. The lowest temperature was 3°, which occurred at Tamarack, Alpine County, on the 28th. The lowest temperatures of the present December are far above those of last year, as shown by the following figures: Tamarack, −24° and Beckwith, −17° on the 4th and 6th, respectively, of December, 1909.

PRECIPITATION.

The average monthly precipitation for the State was 1.87 inch, or 2.27 inches below the normal. There was therefore a marked deficiency. The dry condition appears to have been part of a long dry spell extending back to the middle of last spring, and referred to further on in connection with the snowfall reports. The distribution of the rain geographically was good and the southern counties received their full share. In at least one of the disturbances the rainfall was heavier in the south than in the north. The greatest monthly rainfall was 8.98 inches at La Porte. At 11 stations no rain fell. These were chiefly in the southeast and in the Salinas Valley.

The average monthly precipitation for California in December has been as follows:

Year.	Amount.	Departure.	Year.	Amount.	Departure.
	Inch.	*Inch.*		*Inch.*	*Inch.*
1897	1.75	−2.39	1904	3.04	−1.10
1898	1.20	−2.94	1905	1.55	−2.59
1899	3.03	−1.11	1906	8.42	+4.28
1900	1.68	−2.46	1907	5.41	+1.27
1901	1.45	−2.69	1908	2.33	−1.81
1902	2.96	−1.18	1909	6.92	+2.78
1903	1.44	−2.70	1910	1.87	−2.27

SNOWFALL.

December was a month of very light snowfall in the mountains of California. Probably not since records have been kept has there been so little snow on the ground at the close of the year. The ground was bare and without the usual snow cover at even comparatively high elevations. At Summit, Placer County, for example, where records have been kept for many years, the total fall for the month amounted to 33 inches, of which there remained on the ground only 4 inches. The average depth at the end of December is about 35 inches. During December, 1909, 83 inches fell, of which there remained on the ground at the close of the month 45 inches. The cause of the light snowfall was the continued existence of light north, northeast, and east winds, all of which are dry winds. The year closed with less water in the form of packed snow on the mountain ranges than has ever been known since the State was settled, except possibly during the month of December, 1876. Records, however, are meager for that period. The run-off was probably the lightest for any December.

The following extract from the last snowfall report published in the spring of the year is worth recalling:

> The snowfall during the month of April was lighter than in any April in the past 9 years during which time snowfall records have been kept. It was possibly the lightest snowfall since the country has been settled. The month was practically without snow.

It seems therefore reasonable to conclude that the present dry spell is a continuation of a long period of deficient precipitation, the causes of which are still operative.

The following reports show the amount of snow at different points in the State:

SISKIYOU COUNTY.

McCloud.—Two and one-half inches fell; none remaining on the ground.
Sisson.—One-half inch fell; none remaining on the ground.
Gilta.—One inch fell; none remaining on the ground.

HUMBOLDT COUNTY.

Bluff Creek Ranch.—On the summit 2 miles away the snow is not over 4 inches deep. No snow on south slope.

MODOC COUNTY.

Alturas.—One-half inch fell; none remaining on the ground.
Cedarville.—One-half inch fell; none remaining on the ground.

LASSEN COUNTY.

Long Valley.—Four inches fell; none remaining on the ground.
Madeline.—Six and one-half inches fell; none remaining on the ground.
Eagle Lake.—Two inches fell; none remaining on the ground.

PLUMAS COUNTY.

Clover Valley.—Seven inches fell; 3 inches on ground at end of month.
Greenville.—Trace fell; none on ground at end of the month.
Butte Valley.—One inch fell; none on ground at end of month.
La Porte.—Three inches fell.
Quincy.—No snow fell.

SIERRA COUNTY.

Dorsey's.—Thirteen inches fell; 3 inches on ground at end of month.
Sierra City.—No snow fell.
Sierraville.—Three inches fell; none on ground at end of month.
Table Rock.—Three inches fell.

NEVADA COUNTY.

Bear Valley.—No snow fell.
Fordyce Dam.—Ten inches fell; none remaining on the ground.

PLACER COUNTY.

Summit.—Thirty-three inches fell; 4 inches remaining on the ground.
Emigrant Gap.—No snow feel.
Blue Canyon.—No snow fell.
Tamarack.—Seven inches fell; none remaining on the ground.

ALPINE COUNTY.

Tamarack.—Sixty-two inches fell; 24 inches remaining on the ground.

INYO COUNTY.

Bishop Creek Gold Mine.—Thirty-four and one-half inches fell; 14 inches remaining on the ground.

SOUTHERN SIERRA.

Summerdale (Mariposa County).—No snow fell. No snow in sight, except on the highest mountains.
Bear Valley (Kern County).—Two inches fell; none remaining on the ground.

SOUTHERN CALIFORNIA.

Fredalba (San Bernardino County).—Seven and one-half inches fell; none remaining on the ground.
Holcomb (San Bernardino County).—Six inches fell; none remaining on the ground.
Idyllwild (Riverside County).—One inch fell; none remaining on the ground.

SUNSHINE.

The following table gives the total hours of sunshine and percentages of possible.

Stations	Hours.	Percentage of possible.	Stations.	Hours.	Percentage of possible.
Eureka	92	32	Sacramento	102	35
Fresno	120	40	San Diego	236	76
Los Angeles	225	73	San Francisco	149	50
Mount Tamalpais	130	44	San Jose	157	52
Red Bluff	162	56	San Luis Obispo	143	47

EARTHQUAKES.

The following earthquakes were registered at the Observatory of Santa Clara College, the Rev. J. S. Ricard, S. J., Director:

December 3, 6:07 a. m., period 1.2 second; minor tremors the entire day. December 5, 12:24:26 p. m., disturbance southeast; minor tremors during the day. December 10, 1:39:12 a. m.; many small tremors followed. December 12, 9:28 a. m. December 13, 4:41 p. m., period 20 seconds; occasional traces during the day. December 16, 7:05 a. m., mere trace, period 20 seconds. December 19, 5 a. m., period 1 second; origin of disturbance 81.62 kilometers southeast; one faint shock felt. December 28, 9:31 a. m., period 1.5 second; in all, 3 records; disturbance northeast. December 31, 4:11 a. m., periods 1.5 second, 1 second, and 0.75 second; 3 shocks felt; movement from northwest; distance from origin, 125 kilometers.

The last earthquake was the 29th disturbance recorded since the instruments were installed, about the beginning of June, 1910.

Earthquakes were reported at San Diego on December 3 at 6:07 a. m.; shocks lasted 2 or 3 seconds, but were not severe enough to crack plaster. The Official in Charge of the Weather Bureau at San Diego gives the time as 6:04:20 a. m. to 6:04:24 a. m. The office clock stopped.

At Eureka a light earthquake shock was felt at 11:20 p. m., December 12.

At San Francisco a moderate shock was felt at 4:12:14 a. m., consisting of 4 or 5 vibrations.

At Lick Observatory, Mount Hamilton, Doctor Campbell reports the following: December 12, earthquake of intensity III. At 9:28 a. m., two distinct jolts a second or two apart. December 15, 7:28:05, shocks similar to that of December 12. December 19, at 5:0:53 a. m., intensity II. December 31, 4:11:25 a. m., intensity III; shock lasted 10 or 12 seconds; vibrations gentle and rocking, increasing in intensity.

At Los Gatos, Mr. Irving H. Snyder reports a light earthquake shock at 4:11:10 a. m., December 31; motion rather slow, but awakened most sleepers; duration from 10 to 15 seconds. A light tremor occurred in the forenoon.

THUNDERSTORMS.

A severe thunderstorm occurred at Santa Barbara December 19, from 4 to 6 p. m., accompanied by hail and heavy rain.

MISCELLANEOUS.

On Monday, December 27, at Los Angeles, Arch Hoxsey, in a Wright biplane reached an altitude of 11,474 feet, the world's record for altitude. The wind was blowing from the north at an estimated average velocity of 20 to 30 miles, and the aviator reported that he traveled 15 or 20 miles in a most biting wind. When about a mile out over the ocean the wind was about the same, and the temperature, if anything, lower. The trip against the wind was made slowly. It required 46 minutes to go from Redondo to Venice. The aviator's hands and feet were numb. He continued to circle and make altitude, but on account of the low temperature had to descend.

Mr. Hoxsey was killed a few days later.

NOTES ON THE RIVERS OF THE SACRAMENTO AND SAN JOAQUIN VALLEYS FOR DECEMBER, 1910.

Sacramento watershed.—At the beginning of the month all streams in this watershed were unusually low for the season. General rains during the first decade of the month resulted in substantial rises in all of the main rivers and an increase in the run-off of the smaller water courses between the 10th and 13th. By the 15th, however, a general fall was in progress, and by the close of the month the rivers were as low and, in many cases, lower than they were at the beginning. In the mountain streams there was a decided shortage of water after the 15th, due, not only to the small amount of snow on the high ranges, but to the fact that there was no snow upon the ground below the 5,000-foot level at any time during the month.

San Joaquin watershed.—The rivers of this watershed responded slightly to the rains which, in point of occurrence,

were practically coincident with those of the Sacramento watershed, but by the close of the month all streams had receded to the extreme low-water stages.—*N. R. Taylor, Local Forecaster.*

The following article was published in the Pacific Rural Press, December 24, 1910, by courtesy of the Chief of the Weather Bureau.

EXPERIMENTS IN FROST PROTECTION.

By Prof. ALEXANDER G. MCADIE.

In the Monthly Weather Review for June, 1909, page 224, in a short article upon "Frost damage prevented by the use of covers," there is given a discussion of the question frequently asked by fruit growers whether the heat or the smoke developed by fires and smudges of various frost-fighting devices now in general use prevents the injury, and which is the more efficient and economical, other things being equal.

Frost fighting by means of coal baskets, oil burners, orchard heaters, and various other types of fuel burners, has been practiced in California for 15 years with marked success. Indeed, it may be said that all of the modern methods of frost fighting had their origin in the cooperative work of the

Antifrost cover made of prepared paper. Weight, 5 pounds; area covered, 60 square feet.

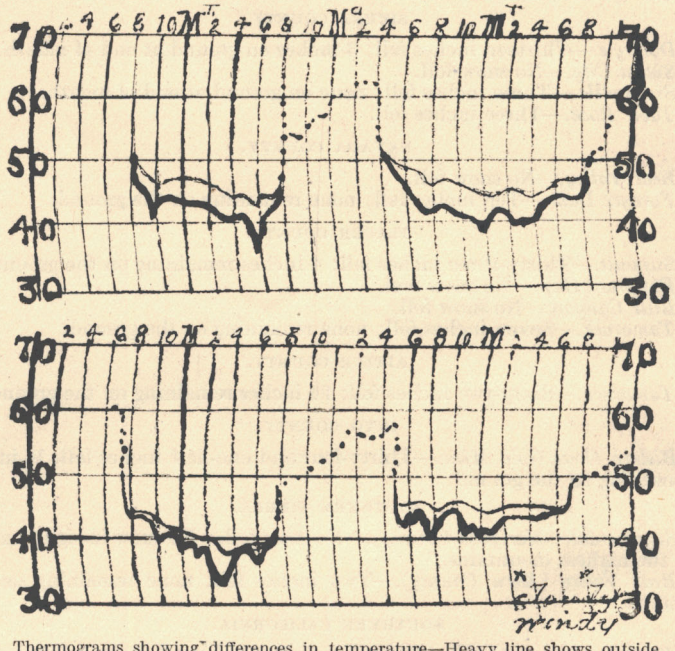
Weather Bureau and the fruit growers in California. In numerous publications issued by the Weather Bureau, the whole problem of protection has been so discussed and developed, both with regard to the general underlying principles and the special requirements of certain localities and individual crops, that vast good has been accomplished, and the interest taken in the work is now widespread and of national importance.

No one method can be laid down as universally the best; and it is plain that a device best suited for cranberries or garden truck may not be equally applicable for the protection of oranges. Nor will the method best suited for lemons necessarily be best for pears or apples. In the cranberry sections draining, clearing, and sanding are found to be the most efficient agencies. In the citrus fruit belts, heating devices and (where the fall in temperature is not too great) smudging devices are best. For the protection of vines and small fruits, nothing is as good as a cover. In each locality the grower must determine what method best suits his crop and locality.

In the present article the writer gives the result of some preliminary experiments made during the month of November, 1910, with antifrost cover. Following up the suggestion made in the Monthly Weather Review above quoted, also the line of argument given in the Monthly Weather Review for July, 1910, page 1107, it appears that a large amount of the heat used with oil pots, orchard heaters, coal baskets, and especially open fires, is wasted—that is, it does not directly (and, if indirectly, only to a small degree) aid the fruit. The trouble is that the rate of conduction of heat through air is small, and, owing to ascensional currents, most of the heat is by convection carried to a level where there is nothing to protect. If we could establish horizontal currents at the desired level, the efficiency of the heating devices would be greatly increased. Therefore, it seems to us that none of the forms of heaters on the market at the present time do as effective work as they could be made to do if provided with auxiliary devices in the shape of fans or flues for directing and delivering heat to the spot where most needed.

As a result of considerable experimentation, we have come to the conclusion that open fires or fuel burned in wire baskets, in pots, or in stoves, whether wood, coal, oil (crude or distillate), as used on the ground, will not under severe conditions afford absolute protection, especially to young and tender vegetation. Of course, by doubling the number first usually employed, the degree of protection can be increased. In ordinary practice, however, where from 30 to 40 fires or pots per acre are used, a fall in temperature to 20° F. and a continuation of the low temperatures for 4 or 6 hours will not be offset by the heat provided. The oil pot is objectionable, too, unless the combustion is perfect, because there may be a deposit of soot upon the blossoms.

As stated in the Monthly Weather Review, June, 1909, the ideal method of frost protection would be a combination of a cover device and a heating device. Aside from its own value, the cover as an auxiliary to the heater permits of an economical use of fuel. By itself the cover, when properly placed, utilizes the earth's heat, which, after all is said and done, must remain the cheapest fuel possible. It is of course the sun's heat reemitted.



Thermograms showing differences in temperature—Heavy line shows outside temperature.

The reemitted heat waves have a wave length from three to four times longer than the first waves. Therefore a suitable cover, preferably black, serves to prevent the escape of the heat into space and there is a further reemission. This second-hand sun heat is, as we may express it, trapped and held where needed. By conserving this heat we use the very cheapest heat energy that can be obtained, nothwithstanding that the initial cost of the cover may be considerable. It also furnishes the additional protection of screening or shielding the chilled fruit or vegetable tissue from sudden warming. Of course, the condition of the plant is all important. A tree that is backward or not in a tender condition will go through a temperature change uninjured which would seriously affect another tree in a more sensitive condition. It has been shown in various papers that the exposure to the sun's rays in the morning is of great importance and that the rise in temperature following the fall must be guarded against. The cover lets us do this better than any other device.

The illustration herewith shows a new form of cover as used in the protection of deciduous fruit trees. It is also suitable for the protection of citrus fruit trees, and, in somewhat modified form, affords a certain protection for vines, garden truck, flowers, and ground crops. The cover consists of a reasonably cheap and light-weight material, yet sufficiently tough to withstand out-of-door exposure, and is rainproof. It is essentially a paper cover, and the principle, indeed, is the same as used by many housekeepers and gardeners to protect favorite plants, namely, by covering them with newspapers or cloths. The waterproof paper used is of various makes, but in the illustration shown was of the kind known commercially as "Keepdry." The material can be made in double sheets with an intervening air space, which gives a very high

TABLE 1.—*Climatological data for December, 1910. District No. 11, California.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.					Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Oregon.																			
Klamath Agency	Klamath	4,169	2	28.0	.....	49	7	8	28 40	0.38	.....	0.25	3.5	3	7	14	10	nw.	Edson C. Watson.
Klamath Falls	....do	4,250	19	32.4	0.0	50	1	14a	27 24a	1.19	−0.82	0.37	1.0	7	9	9	13	nw.	W. H. Heileman.
Lakeview	Lake	4,825	25																Geo. L. Wharton, jr.
Merrill	Klamath	4,070	5	33.6	.....	50	6	15	28† 29	2.30	.....	1.20	T.	4	12	7	12	.....	Mrs. Agnes Ritchson.
Yenna	....do	4,146	3	32.4	.....	51	15	7	28 34	1.86	.....	0.40	0.5	8	7	15	9	s.	Jacob Rueck.
California.																			
Alameda	Alameda	.....	1	50.8	.....	64	24	34	28	0.20	.....	0.15	0.0	4	13	12	6	w.	Chas. E. Sears.
Alturas	Modoc	4,460	6	35.1	.....	61	1	13	28 34	2.25	.....	0.93	0.5	8	10	11	10	nw.	Prof. C. B. Towle.
Angiola	Tulare	208	10	37.4	− 7.8	55	23	23	20 24	0.60	+0.29	0.25	0.0	3	14	1	16	nw.	Santa Fe Co.
Antioch	Contra Costa	46	31	50.5	+ 2.2	70	2	32	16†	2.02	−0.52	1.00	0.0	4	20	0	11	.....	Southern Pacific Co.
Aptos	Santa Cruz	102	25	49.8	+ 0.1	69	9	30	26†	1.85	−3.40	1.12	0.0	3	18	1	12	nw.	Do.
Arrowhead Springs	San Bernardino	2,000	1																G. I. Royce.
Auburn	Placer	1,360	39	47.6	+ 0.6	68	19	29	31 28	3.30	−2.77	1.75	0.0	5	20	1	10	ne.	Southern Pacific Co.
Avalon	Los Angeles	.....	....	57.8	.....	74	5†	45	28 20	1.14	.....	0.95	0.0	3	24	6	1	.....	T. S. Manning.
Azusa	....do	540	8	57.8	.....	88	3	30	29 46	0.25	−1.29	0.25	0.0	1	25	5	1	sw.	A. P. Griffith.
Bagdad	San Bernardino	784	7	56.2	.....	74	1†	35	27 32	0.00	.....	0.00	0.0	0				.....	Santa Fe Co.
Bakersfield	Kern	404	21	48.4	+ 0.2	69	12	30	29 30	0.54	−0.26	0.24	0.0	4	23	1	7	.....	Do.
Barstow	San Bernardino	2,105	7	51.2	.....	87	3	23	29 50	0.04	−0.60	0.04	0.0	1	29	0	2	w.	E. L. White.
Berkeley	Alameda	317	23	50.4	+ 1.5	64	18	38	28 18	1.80	−2.99	1.26	0.0	3	15	9	7	n.	State University.
Biggs	Butte	98	11	56.6	+12.2	69	1†	39	30†	1.67	−1.53	0.95	0.0	5	12	3	15	.....	Southern Pacific Co.
Bishop	Inyo	4,450	15	41.0	+ 0.7	66	7†	13	29 39	0.30	+0.04	0.11	T.	3	19	5	7	.....	W. A. Chalfant.
Blocksburg	Humboldt	1,700	4	45.6	.....	62	1†	26	31 30	5.00	.....	1.65	0.0	12	3	8	20	se.	Victor Hope.
Blue Canon	Placer	4,695	11	44.2	+ 2.9	68	7	18	5† 37	6.85	−2.50	2.10	0.0	7	19	0	12	n.	Southern Pacific Co.
Blythe	Riverside	.....	1																M. L. Willits.
Branscomb	Mendocino	2,000	10	46.4	.....	71	18	27	28 39	5.63	−6.93	2.27	0.0	10	15	7	9	n.	A. J. Haun.
Brawley	Imperial	−105	1	55.4	.....	81	4	28	31 41	0.00	.....	0.00	0.0	0				.....	M. D. Witter.
Brush Creek	Butte	2,140	6	44.0	.....	78	13†	22	28 48	4.31	.....	2.20	0.0	5	19	0	12	s.	Cal. Gas & Electric Co.
Calexico	Imperial	0	5	56.2	.....	78	3†	35	24† 32	0.00	.....	0.00	0.0	0	25	4	2	nw.	J. E. Peck.
Caliente	Kern	1,290	34	50.0	+ 0.3	69	9	38	28	0.36	−1.65	0.16	0.0	3				.....	Southern Pacific Co.
Calistoga	Napa	363	38	50.1	+ 0.9	76	14	24	27	2.32	−4.11	0.99	0.0	4	18	0	13	s.	Do.
Campbell	Santa Clara	217	13	47.6	+ 0.7	68	1	26	31 38	0.69	−1.15	0.34	0.0	4	9	9	13	nw.	F. M. Righter.
Camptonville (near)	Yuba	3,500	3	46.8	.....	68	1	26	31 32	5.68	.....	2.30	0.0	8	17	4	10	.....	Cal. Gas & Electric Co.
Cedarville	Modoc	4,675	16	34.9	+ 4.7	65	8	16	28† 31	2.75	+0.88	0.72	0.5	7	17	11	3	nw.	T. H. Johnstone.
Chico	Butte	189	40	48.0	+ 0.5	71	19	26	31 39	1.77	−2.45	0.80	0.0	7	18	1	12	n.	G. H. Stephenson.
China Flat	Humboldt	600	1	46.6	.....	61	11†	26	26 24	4.62	.....	1.32	0.0	11	10	11	10	s.	O. I. Westerburg.
Chino	San Bernardino	714	18	51.5	− 0.7	75	1†	30	31	0.38	−1.80	0.38	0.0	1	18	0	13	se.	Southern Pacific Co.
Cisco	Placer	5,939	39	38.2	+ 4.8	49	16†	20	4	5.90	−2.60	2.20	1.0	6	16	1	14	.....	Do.
Claremont	Los Angeles	1,200	18	56.4	+ 4.8	85	2	34	31 37	0.30	−1.85	0.27	0.0	3	18	7	6	w.	F. P. Brackett.
Cloverdale	Sonoma	340	8	51.4	.....	77	22	28	31 40	1.66	.....	1.15	0.0	3	24	1	6	n.	Lloyd Browne.
Colfax	Placer	2,421	39	46.2	− 0.4	69	2	25	31 39	5.35	−3.33	2.31	0.0	6	18	0	13	n.	Southern Pacific Co.
Colusa	Colusa	60	7																"The Sun."
Corning	Tehama	277	24	50.6	+ 3.3	70	2†	32	22†	1.34	−2.65	0.50	0.0	5	16	3	12	n.	Southern Pacific Co.
Cuyamaca	San Diego	4,677	11	44.4	+ 5.7	69	2	23	31 33	1.12	−4.30	0.79	1.5	3	8	17	6	e.	L. L. Macquairie.
Daunt	Tulare	4,000	3	44.2	.....	76	6	22	4† 45	3.13	.....	1.20	T.	5	12	15	4	.....	D. L. Wishen.
Davisville	Yolo	51	38																S. H. Beckett.
Deer Creek	Nevada	3,700	3	40.6	.....	61	19	18	31 34	5.98	.....	2.75	0.0	9	13	7	11	w.	Cal. Gas & Electric Co.
Delta	Shasta	1,138	25	47.5	+ 3.3	70	20	25	31 40	4.64	−6.34	1.62	0.0	7	16	0	15	.....	Southern Pacific Co.
Denair	Stanislaus	126	10	47.6	+ 1.4	67	9	25	30 35	0.02	−1.22	0.01	0.0	2	17	0	14	.....	Santa Fe Co.
Dobbins	Yuba	1,650	6	50.6	.....	76	18	30	31 32	3.14	.....	1.42	0.0	9	10	11	10	s.	Cal. Gas & Electric Co.
Dudleys	Mariposa	3,000	1	43.2	.....	72	1	18	31 44	1.90	.....	0.92	0.0	5	13	4	14	n.	W. H. Dudley.
Dunnigan	Yolo	65	33	54.5	+ 7.2	68	13†	35	30†	1.83	− 2.00	1.19	0.0	4	13	6	12	n.	Southern Pacific Co.
Dunsmuir	Siskiyou	2,285	21	41.4	+ 1.7	61	15	27	20	4.97	− 6.46	1.50	0.0	6	20	1	10	n.	Do.
Durham	Butte	160	15	46.8	+ 3.1	70	19	23	31 36	1.72	− 2.96	0.84	0.0	3	16	5	10	s.	R. W. Durham.
El Cajon	San Diego	482	11	54.8	+ 0.2	85	9	29	29 47	0.33	− 0.95	0.27	0.0	2	25	4	2	sw.	H. H. Kessler.
Electra	Amador	725	6	50.2	.....	68	12†	28	31 30	1.85	.....	0.88	0.0	5	14	9	8	.....	Cal. Gas & Electric Co.
Elsinore	Riverside	1,234	15	52.1	− 0.5	83	2	24	28† 46	0.14	− 1.78	0.14	0.0	1	23	6	2	w.	A. F. Schult.
Emigrant Gap	Placer	5,230	36	40.6	+ 3.7	60	7	22	2 34	6.48	− 2.66	2.08	0.0	5	16	1	14	.....	Southern Pacific Co.
Escondido	San Diego	657	16	53.0	+ 3.5	82	1†	26	30 51	0.20	− 1.50	0.11	0.0	3	0	29	2	w.	A. R. Moon.
Eureka	Humboldt	64	24	49.2	+ 1.2	65	1	34	28 21	3.43	− 3.85	1.07	0.0	16	4	10	17	n.	U. S. Weather Bureau.
Farmington	San Joaquin	111	31	48.6	+ 1.6	68	11	27	26	0.94	− 1.83	0.30	0.0	5	16	9	6	se.	Southern Pacific Co.
Folsom	Sacramento	252	38	47.3	− 0.3	66	1†	29	31 32	3.52	− 0.51	2.02	0.0	4	13	7	11	n.	F. O. Hutton.
Fordyce Dam	Nevada	6,500	15	32.8	.....	45	1†	12	31 23	6.66	− 1.52	3.20	10.0	11	12	11	8	sw.	E. E. Roening.
Fouts Springs	Colusa	1,650	6																A. J. Burgi.
Fresno	Fresno	293	23	48.9	+ 2.1	70	8	28	30 28	0.21	− 1.29	0.12	0.0	4	6	9	16	nw.	U. S. Weather Bureau.
Fruto	Glenn	624	21	48.2	+ 0.4	69	19	28	31	1.07	− 3.16	0.40	0.0	4	24	0	7	n.	Southern Pacific Co.
Galt	Sacramento	49	32	46.7	− 2.0	75	11	26	31	1.55	− 1.69	0.70	0.0	3	3	8	20	.....	Do.
Georgetown	El Dorado	2,650	37	47.2	− 1.3	69	1	26	31 29	5.25	− 4.14	2.43	0.0	9	17	3	11	ne.	H. D. Jerrett.
Gilroy	Santa Clara	193	36	46.2	− 1.8	70	7†	25	28	0.97	− 2.24	0.43	0.0	5	22	0	9	n.	Southern Pacific Co.
Gold Run	Placer	3,222	11	47.8	+ 0.7	78	19	22	27 30	5.15	− 1.65	2.20	0.0	5	16	0	15	.....	Do.
Gonzales	Monterey	127	11	57.9	+10.1	83	21	35	10	0.00	− 1.47	0.00	0.0	0	31	0	0	n.	Do.
Grass Valley	Nevada	2,690	38	45.2	.....	68	19	23	31 32	4.52	− 4.39	1.97	0.0	8	13	10	8	se.	F. R. Hull.
Greenville	Plumas	3,800	16	38.3	+ 4.7	59	1	14	28† 36	4.42	− 2.04	1.49	T.	7	15	4	12	sw.	C. H. Higble.
Groveland	Tuolumne	3,828	1	45.0	.....	71	1	22	31 32	1.87	.....	0.98	0.0	5	8	21	2	n.	H. S. Richardson.
Guinda	Yolo	350	12																Southern Pacific Co.
Hanford	Kings	249	10																Santa Fe Co.
Healdsburg	Sonoma	110	17	49.9	+ 3.9	75	18	29	27 35	1.92	− 4.46	0.82	0.0	6	17	1	13	n.	F. J. Kinley.
Hearst	Mendocino	1,800	....	48.8	.....	69	13†	28	27† 35	2.60	.....	1.50	0.0	5	11	17	3	.....	H. D. Ellmaker.
Heber	Imperial	−20	4	56.2	.....	81	3	31	27† 42	0.00	.....	0.00	0.0	0	29	1	1	.....	C. J. Booth.
Hollister	San Benito	284	36	50.0	− 0.1	75	9	26	28† 39	0.56	− 1.42	0.36	0.0	5	16	8	7	n.	J. N. Thompson.
Hornbrook	Siskiyou	2,154	22	39.8	+ 2.3	55	1	32	5†	2.50	− 0.44	0.50	0.0	8	8	5	18	.....	Southern Pacific Co.
Hot Springs	Tulare	3,300	3	45.4	.....	77	8	27	28 39	2.41	.....	1.02	0.0	5				.....	U. S. Forest Service.
Hullville (near)	Lake	2,250	3	45.8	.....	69	18	27	28 34	4.30	.....	2.36	0.0	10	4	13	14	nw.	J. H. Betterton.
Idylwild	Riverside	5,250	9	42.4	.....	72	2	17	31 36	0.10	.....	0.10	1.1	1	15	14	2	sw.	Earl Powers.
Independence	Inyo	3,907	14																U. S. Weather Bureau.
Indio	Riverside	−20	32	57.4	+ 0.8	83	15	30	31 40	0.00	− 0.41	0.00	0.0	0	24	7	0	nw.	F. N. Johnson.
Inskip	Butte	4,975	3	36.3	.....	52	15†	20	31 22	6.45	.....	2.58	0.0	5	9	13	9	.....	Cal. Gas & Electric Co.
Ione	Amador	287	32																Southern Pacific Co.
Jamestown	Tuolumne	1,471	7	45.7	.....	63	1	24	30 28	1.73	.....	0.77	0.0	4	27	1	3	.....	Sierra Ry. Co.
King City	Monterey	333	23	50.0	+ 1.0	80	2	19	28 52	0.00	− 2.19	0.00	0.0	0	28	0	3	n.	Southern Pacific Co.
La Porte	Plumas	5,000	16	40.8	+ 6.7	61	15	16	31 33	8.98	− 1.50	1.60	3.0	9	19	3	9	n.	C. W. Hendel.
Le Grande	Merced	255	10	47.3	+ 0.7	68	7	29	18 36	0.28	− 0.54	0.20	0.0	2	15	1	15	.....	Santa Fe Co.
Lemon Cove	Tulare	600	15	50.6	+ 4.2	72	8†	27	30† 32	0.80	− 0.84	0.52	0.0	3	17	7	7	n.	G. W. Sandidge.
Lick Observatory	Santa Clara	4,209	21	44.7	+ 2.7	63	1	28	31 21	1.77	− 5.41	0.92	0.0	6	17	14	0	n.	The Director.
Livermore	Alameda	485	39	50.2	− 0.3	75	1†	26	31 43	1.32	− 1.79	0.72	0.0	6	14	4	13	ne.	E. G. Still.
Lodi	San Joaquin	45	28	46.5	− 0.8	64	8†	25	28 25	1.27	− 2.29	0.54	0.0	6	10	7	14	se.	Ezra Fiske.
Lone Pine	Inyo	2,728	5	42.4	.....	65	3	19	30 37	0.22	.....	0.18	0.0	2	14	14	3	s.	G. F. Marsh.
Long Valley	Lassen	4,400	1	34.7	.....	57	8	14	28 24	2.47	.....	1.21	4.0	7	6	4	21	sw	A. G. Evans.

TABLE 1.—*Climatological data for December, 1910. District No. 11*—Continued.

Stations.	Counties.	Elevation.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
California—Continued.																				
Los Angeles	Los Angeles	293	33	59.8	+ 4.5	83	5	42	31	30	0.07	— 3.91	0.04	0.0	2	12	15	4	ne.	U. S. Weather Bureau.
Los Banos	Merced	121	23	52.3	+ 5.2	70	2	30	18	....	0.47	— 0.86	0.25	0.0	2	12	3	16	n.	Southern Pacific Co.
Los Gatos	Santa Clara	600	23	51.1	+ 2.3	68	1	34	31	25	1.73	— 4.74	0.83	0.0	5	18	8	5	n.	F. H. McCullagh.
Macdoel	Siskiyou	4,258	3	31.2	.....	49	4†	9	26†	32	0.90	.....	0.48	0.0	3	8	4	19	nw.	B. V. L. Co.
Madeline	Lassen	5,270	1	33.2	.....	55	1	10	28	35	2.80	.....	0.90	6.5	9	12	8	11	n.	J. H. Williams.
Magalia	Butte	2,321	6	49.1	.....	72	8†	24	28	39	2.63	.....	1.02	0.0	5	22	5	4	se.	Butte County R. R. Co.
Mammoth Tank	Imperial	257	32	50.7	— 4.7	70	13†	34	30†	29	0.00	— 0.40	0.00	0.0	0	29	0	2	w.	Southern Pacific Co.
Marysville	Yuba	67	39	47.0	— 2.9	64	12	24	31	32	0.81	— 2.65	0.50	0.0	4	15	2	14	s.	Do.
Mecca	Riverside	—185	4	57.4	.....	84	1	30	30†	42	0.00	.....	0.00	0.0	0	22	8	1	e.	E. A. Palmer.
Menlo Park	San Mateo	64	32	50.5	+ 1.5	64	12	34	29	....	1.25	— 2.10	0.50	0.0	3	12	0	19	.....	Southern Pacific Co.
Merced	Merced	173	36	47.4	— 0.9	66	11	31	30	32	0.50	— 1.20	0.25	0.0	4	13	0	18	nw.	Santa Fe Co.
Mill Creek (1)	Amador	.....	3	44.8	.....	62	1†	26	28†	24	4.47	.....	1.81	0.0	7	12	9	10	n.	Cal. Gas & Electric Co.
Milton (near)	Calaveras	660	19	49.2	+ 2.3	66	9	32	28†	22	0.87	— 2.84	0.48	0.0	3	16	8	7	nw.	J. H. Southwick.
Modesto	Stanislaus	90	38	50.4	+ 2.3	65	12	30	26	....	0.56	— 1.29	0.22	0.0	4	23	2	6	.....	Southern Pacific Co.
Mojava	Kern	2,751	33	51.5	+ 4.7	78	5	28	25	34	0.10	— 1.16	0.10	0.0	1	19	0	12	.....	Do.
Mokelumne Hill	Calaveras	1,550	17	48.8	+ 5.3	68	1†	31	17†	37	2.12	— 3.35	0.82	0.0	6	14	2	15	.....	C. E. Prindle.
Mono Ranch	Ventura	3,210	4	43.8	.....	70	2	21	27	41	0.88	.....	0.39	0.0	4	15	12	4	w.	H. Lathrop.
Montague	Siskiyou	2,450	22	33.6	— 4.5	62	1	10	29†	40	1.49	— 0.22	0.48	0.0	7	5	10	16	s.	I. F. Deboy.
Monterey	Monterey	15	45	50.0	— 1.7	66	3†	28	28	....	0.55	— 2.23	0.23	0.0	3	27	1	3	se.	Southern Pacific Co.
Monterio	Kern	4,500	11	50.2	— 1.5	74	8†	28	29†	32	1.79	— 0.23	0.75	0.0	6	17	8	6	nw.	John C. Knecht.
Mount Tamalpais	Marin	2,375	11	47.7	+ 0.1	63	1	34	31	16	2.05	— 0.86	1.18	0.0	6	10	6	15	n.	U. S. Weather Bureau.
Napa City	Napa	20	33	47.1	+ 0.6	65	1	26	31	34	1.37	— 2.82	1.01	0.0	4	12	11	8	s.	Thos. Huil.
Napa (S. H.)	....do	60	32	48.6	+ 2.1	68	17	31	31	28	1.35	— 2.89	0.81	0.0	5	12	7	12	sw.	W. H. Martin.
Needles	San Bernardino	377	18	57.3	+ 4.5	75	4†	42	21†	26	0.07	— 0.41	0.07	0.0	1	18	9	4	w.	Santa Fe Co.
Nellie	San Diego	5,350	1	44.8	.....	71	1†	11	18	50	1.25	.....	0.63	1.5	4	23	0	8	s	T. O. Bailey.
Nevada City	Nevada	2,580	18	44.4	+ 2.5	74	19	20	31	46	4.27	— 6.84	1.98	0.0	8	23	1	7	sw.	S. W. Marsh.
Newcastle	Placer	970	17	50.2	+ 2.8	72	3	31	26†	33	3.31	— 0.92	1.56	0.0	10	18	0	13	n.	G. D. Kellogg.
Newhall	Los Angeles	1,200	33	48.6	— 0.9	83	2	23	30	....	0.27	— 3.13	0.27	0.0	1	25	1	5	se.	Southern Pacific Co.
Newman	Stanislaus	91	21	54.8	+ 5.4	70	18	40	1†	36	0.51	— 1.58	0.28	0.0	3	12	0	18	n.	E. S. Wangenheim.
Nimshew	Butte	2,500	6	45.4	.....	66	19	23	30†	36	3.90	.....	1.38	0.0	9	.....	.....	.....	.....	Cal. Gas & Electric Co.
North Bloomfield	Nevada	3,200	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. G. Shaud.
North Fork	Madera	3,000	6	46.8	.....	78	3	23	31	40	2.06	.....	0.85	0.0	5	4	20	7	nw.	C. H. Shinn.
Oakdale	Stanislaus	156	16	47.9	+ 3.0	65	1†	31	23	....	0.67	— 1.56	0.29	0.0	4	20	3	8	nw.	Southern Pacific Co.
Oakland	Alameda	36	34	50.8	+ 1.6	63	9	37	28	22	2.00	— 2.25	1.23	0.0	9	10	11	10	nw.	Chabot Observatory
Oceanside	San Diego	.....	.....	54.4	.....	70	16	38	27†	26	0.37	.....	0.28	0.0	3	22	9	0	.....	H. D. Brodie.
Ojai Valley	Ventura	900	4	55.2	.....	87	5	27	27†	48	0.35	.....	0.18	0.0	3	21	7	3	sw.	W. H. Duncan.
Orland	Glenn	254	28	48.8	+ 0.9	69	19	29	30	33	1.20	— 1.90	0.48	0.0	6	14	11	6	n.	U. S. Reclamation Service.
Orleans	Humboldt	520	7	49.2	.....	70	12	28	26	34	5.35	.....	1.28	0.0	12	13	6	12	.....	Fred T. Hale.
Oreville (near)	Butte	250	26	48.2	— 0.6	72	18	27	31	35	1.77	— 3.02	0.80	0.0	5	12	4	15	s	E. D. Fairchild.
Palermo	....do	213	19	47.4	+ 2.2	71	18	25	31	35	1.65	— 1.77	1.05	0.0	2	10	9	12	s.	Miss Hattie Boalt.
Palm Springs	Riverside	584	21	56.4	+ 1.3	80	4	32	30	....	0.00	— 1.20	0.00	0.0	0	19	9	3	.....	Southern Pacific Co.
Pasadena	Los Angeles	827	20	55.7	+ 1.7	84	2†	33	28†	39	0.15	— 2.49	0.06	0.0	3	25	5	1	sw.	E. R. Serven.
Paso Robles	San Luis Obispo	800	23	48.5	+ 2.9	78	2	16	30	45	0.62	— 2.37	0.32	0.0	4	19	4	8	nw.	Dr. F. W. Sawyer.
Peachland	Sonoma	190	14	48.2	+ 0.9	74	8	27	26	35	1.98	— 3.12	1.45	0.0	8	15	10	6	s.	F. H. Parnell.
Penstock Camp	Tuolumne	3,750	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tuolumne W. P. Co.
Placerville	El Dorado	1,875	21	45.1	+ 3.1	66	8	22	31	36	4.30	— 3.53	2.32	0.0	7	18	6	7	.....	A. Baring-Gould.
Point Lobos	San Francisco	250	17	51.8	+ 2.4	65	18	42	18	23	1.73	— 1.20	0.66	0.0	4	14	5	12	ne.	John Hyslop.
Point Reyes	Marin	490	18	52.2	+ 1.6	66	13	44	27	19	1.32	— 2.42	0.60	0.0	6	8	11	12	nw	U. S. Weather Bureau.
Porterville	Tulare	464	21	50.5	+ 2.0	73	7	29	30	32	1.03	— 0.59	0.50	0.0	5	15	8	8	.....	Leslie McAuliff.
Quincy	Plumas	3,400	15	40.2	+ 5.7	54	8†	16	28†	38	4.92	— 0.97	1.50	0.0	8	17	6	8	.....	D. N. Rogers.
Red Bluff	Tehama	307	33	49.2	+ 2.8	67	12	32	31	26	1.78	— 3.53	0.58	0.0	6	12	10	9	nw.	U. S. Weather Bureau.
Redding	Shasta	552	35	48.9	+ 1.9	70	19	30	31	31	3.60	— 3.14	1.15	0.0	7	15	9	7	n.	L. F. Bassett.
Redlands	San Bernardino	1,352	17	54.8	+ 1.6	83	2	33	28	37	0.67	— 2.19	0.55	0.0	2	12	14	5	w.	Paul W. Moore.
Reedley	Fresno	347	10	47.8	+ 1.9	68	8†	26	30†	30	0.36	— 0.25	0.25	0.0	2	12	10	9	n.	Santa Fe Co.
Rialto (near)	San Bernardino	2,250	4	58.4	.....	81	2	35	31	21	0.19	.....	0.14	0.0	5	17	13	2	n.	So. Cal. Edison Co.
Riverside	Riverside	851	28	53.6	+ 0.2	80	1†	28	31	44	0.04	— 1.70	0.02	0.0	3	24	4	3	n.	C. W. Barton.
Rocklin	Placer	249	39	51.4	+ 3.5	75	19	30	31	41	2.45	— 1.32	1.25	0.0	2	15	1	15	ne.	Southern Pacific Co.
Rohnerville	Humboldt	75	7	49.2	.....	67	2	30	26	24	3.53	.....	1.00	0.0	9	6	16	9	n.	Dr. R. Callihan.
Sacramento (1)	Sacramento	71	33	48.0	+ 1.7	66	18	32	30	28	1.62	— 2.52	0.99	0.0	6	8	4	19	se.	U. S. Weather Bureau.
Sacramento (2)	....do	35	57	48.0	+ 1.0	65	18	29	31	30	2.08	— 2.04	1.05	0.0	8	15	4	12	nw.	S. H. Gerrish.
St. Helena	Napa	255	2	50.4	.....	75	13	30	30	38	1.85	.....	1.12	0.0	3	17	4	10	n.	Frank Kettlewell.
Salinas	Monterey	40	36	53.0	+ 2.9	83	13	38	31	40	0.61	— 1.74	0.35	0.0	5	26	2	3	w.	Miss E. Ruth Abbott.
San Bernardino	San Bernardino	1,054	18	54.6	+ 2.6	87	2	28	30	50	0.03	— 2.86	0.02	0.0	2	19	12	0	sw.	Dr. A. K. Johnson.
San Diego	San Diego	93	39	56.2	+ 0.5	74	15	40	28	27	0.15	— 1.98	0.15	0.0	2	21	7	3	e.	U. S. Weather Bureau.
San Francisco	San Francisco	207	39	53.0	+ 2.1	68	18	43	16	19	1.73	— 3.30	0.99	0.0	5	9	10	12	nw.	Do.
San Jacinto	Riverside	1,550	17	53.8	+ 3.8	85	2	25	28	47	0.00	— 1.64	0.00	0.0	0	21	3	7	w.	E. T. Tanner.
San Jose	Santa Clara	95	35	49.4	— 0.5	70	1	28	31	36	0.68	— 1.97	0.41	0.0	8	10	9	12	se.	U. S. Weather Bureau.
San Leandro	Alameda	48	15	49.2	— 3.2	68	17	28	27†	34	1.58	— 0.99	0.97	0.0	5	15	3	13	n.	Frank Jones.
San Luis Obispo	San Luis Obispo	201	15	55.0	+ 2.2	79	2	33	30	40	0.95	— 3.55	0.77	0.0	5	7	10	14	n.	U. S. Weather Bureau.
San Mateo	San Mateo	22	36	52.9	+ 3.3	68	4	38	26†	....	1.64	— 2.04	0.65	0.0	7	10	12	9	nw.	Southern Pacific Co.
San Miguel	San Luis Obispo	616	23	50.1	+ 2.5	69	2†	22	30	....	0.56	— 1.68	0.26	0.0	3	11	10	10	s.	Do.
San Miguel Island	Santa Barbara	500	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. G. Waters.
Sanger	Fresno	371	21	42.1	— 5.5	70	2	29	28†	....	0.20	— 1.63	0.12	0.0	3	.....	.....	.....	.....	Southern Pacific Co.
Santa Barbara	Santa Barbara	130	26	55.8	+ 0.1	77	1†	36	28†	33	0.75	— 2.48	0.52	0.0	5	27	4	0	w.	Geo. W. Russell.
Santa Clara	Santa Clara	90	21	50.0	+ 0.6	71	1	27	26†	40	1.00	— 2.20	0.44	0.0	6	16	5	10	se.	Santa Clara College.
Santa Cruz	Santa Cruz	20	37	51.5	— 0.9	75	9†	28	26	35	1.80	— 3.49	1.10	0.0	2	21	6	4	n.	W. R. Springer.
Santa Margarita	San Luis Obispo	996	21	51.2	+ 6.2	68	8†	32	27†	....	0.71	— 4.45	0.58	0.0	3	13	3	15	sw.	Southern Pacific Co.
Santa Maria	Santa Barbara	220	22	52.6	— 1.1	72	5	32	27	31	0.45	— 2.01	0.20	0.0	3	25	0	6	w.	L. E. Blochman.
Santa Monica	Los Angeles	110	25	53.7	— 3.3	77	5	37	21†	30	0.28	— 1.88	0.17	0.0	3	18	11	2	w.	N. D. Ingham.
Santa Rosa	Sonoma	181	21	48.6	— 0.3	74	18	26	28	36	1.68	— 4.38	1.22	0.0	5	8	9	14	sw.	M. L. McDonald, jr.
Selma	Fresno	311	24	48.1	+ 2.1	65	11	24	30	....	0.47	— 0.95	0.32	0.0	3	12	15	4	nw.	Southern Pacific Co.
Shasta	Shasta	1,049	14	49.8	+ 2.1	79	20	23	29	54	3.01	— 4.49	1.34	0.0	5	17	5	9	nw.	Dr. T. J. Edgecomb.
Sierra Madre	Los Angeles	1,400	13	57.2	+ 0.7	83	2	40	22†	32	0.31	— 1.61	0.17	0.0	3	24	0	7	w.	Mrs. A. C. Gregory.
Sierraville	Sierra	5,000	....	34.0	.....	62	1	8	28	47	2.80	.....	1.45	3.0	4	15	4	12	sw.	C. D. Johnson.
Sisson	Siskiyou	3,555	21	37.2	+ 2.7	56	13	19	27	34	2.67	— 4.61	0.81	0.5	6	12	8	11	n.	Southern Pacific Co.
Soledad	Monterey	188	36	55.5	+ 6.2	77	6	35	29	....	0.00	— 1.50	0.00	0.0	0	17	0	14	n.	Do.
S. E. Farallones	San Francisco	30	7	52.8	.....	62	18	47	19	13	1.20	.....	0.73	0.0	6	10	13	8	n.	U. S. Weather Bureau.
Sonora	Tuolumne	1,825	22	46.5	.....	66	9	28	31	31	1.69	— 3.97	0.73	0.0	4	12	12	7	nw.	Chas. P. Jones.
Stirling City	Butte	3,525	6	49.9	.....	80	26	22	31	45	5.00	.....	1.40	0.0	5	7	19	5	.....	Butte Co. R. R. Co.
Stockton (S. H.)	San Joaquin	23	39	45.3	— 1.8	62	9	26	28	27	1.31	— 2.05	0.45	0.0	6	15	7	9	nw.	State Hospital.
Storey	Madera	296	10	46.0	+ 1.2	65	11†	28	2†	29	0.26	— 0.90	0.31	0.0	2	16	0	15	nw.	Santa Fe Co.
Suisun	Solano	20	30	47.9	— 0.7	81	19	31	15†	....	0.04	— 3.85	0.02	0.0	3	28	0	3	w.	Southern Pacific Co.
Summerdale	Mariposa	5,270	14	43.3	+ 3.8	69	1	20	31	34	2.44	— 2.98	1.24	0.0	4	6	10	15	s.	J. H. Lowry.
Summit	Placer	7,017	37	32.2	+ 1.7	49	1	13	26	26	4.08	— 3.80	2.30	33.0	7	14	1	16	w.	Southern Pacific Co.
Susanville	Lassen	4,175	21	34.6	+ 2.2	55	2	13	31	25	3.06	— 0.91	0.98	T.	7	12	12	7	nw.	Jas. Branham.
Tamarack	Alpine	8,000	4	26.8	.....	42	14†	3	28	35	8.35	.....	1.80	62.0	12	10	3	18	sw.	Cal. Gas & Electric Co.
Tehachapi	Kern	3,964	33	46.4	+ 6.9	69	9	31	31	....	0.83	— 1.13	0.43	0.0	2	.....	.....	.....	.....	Southern Pacific Co.
Tehama	Tehama	220	39	51.0	+ 2.4	66	28†	32	1	....	1.37	— 2.19	0.50	0.0	5	18	2	11	s.	Do.

TABLE 1—*Climatological data for December, 1910. District No.* 11—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
California—Continued.																			
Three Rivers	Tulare	870	....	49.1	.....	72	1†	26	30	37	1.56	.....	0.73	0.0	6	11	13	7	sw.	E. D. Barton.
Towle	Placer	3,704	24	43.7	+ 1.4	75	1	22	31	38	5.68	− 1.96	2.20	0.0	5	21	0	10	sw.	Southern Pacific Co.
Tracy	San Joaquin	64	30	47.8	− 1.8	59	3†	32	30	....	0.42	− 1.74	0.15	0.0	6	11	6	14	nw.	Do.
Ukiah	Mendocino	620	17	47.3	+ 2.6	66	18	24	26	36	1.80	− 4.97	1.32	0.0	7	11	7	13	nw.	Dr. Geo. McCowen.
Upland	San Bernardino	1,750	13	53.8	+ 0.4	80	9	30	31	36	0.23	− 1.28	0.21	0.0	2	15	7	9	w.	Chas. E. Harwood.
Upperlake	Lake	1,350	25	44.2	− 1.4	69	13	25	28	35	1.71	− 3.87	1.11	0.0	5	21	2	8	nw.	C. M. Hammond.
Vacaville	Solano	175	22	49.4	+ 1.8	67	1†	27	30†	36	1.80	− 4.08	0.80	0.0	5	14	9	8	n.	G. O. Coburn.
Valley Springs	Calaveras	673	21	50.1	+ 2.4	64	4	31	31	....	1.34	− 2.93	0.39	0.0	5	11	13	8	w.	Southern Pacific Co.
Visalia	Tulare	334	22	54.9	+10.3	82	10	32	15†	44	0.71	− 0.99	0.50	0.0	2	19	10	2	nw.	Santa Fe Co.
Warner Springs	San Diego	3,165	2	52.0	.....	83	2	24	31	44	0.49	.....	0.45	0.0	3	27	3	1	.....	Mrs. F. S. Sanford.
Wasco	Wasco	336	10	41.9	− 3.1	74	2†	20	19†	50	0.70	+ 0.36	0.70	0.0	1	12	4	15	.....	Santa Fe Co.
Watsonville	Santa Cruz	23	14	51.0	− 0.3	77	9	26	31	38	1.44	− 2.65	0.62	0.0	4	12	14	5	sw.	Spreckels Sugar Co.
Westley	Stanislaus	90	21	47.9	− 1.4	68	1	27	30	....	0.45	− 1.64	0.25	0.0	3	12	6	13	.....	Southern Pacific Co.
Wheatland	Yuba	84	23	46.6	+ 1.5	67	18	27	31	31	1.77	− 1.91	1.01	0.0	6	14	6	11	n.	Wm. Lumbard.
Willows	Glenn	136	31	48.0	+ 0.8	69	19	26	31	29	1.18	− 2.08	0.60	0.0	6	17	2	12	n.	M. T. Harrington.
Yosemite	Mariposa	3,945	6	37.4	.....	58	9	15	27	39	1.66	.....	1.14	0.0	4	18	8	5	n.	J. P. Kelly.

a, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
* Precipitation included in that of the next measurement.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
‡ Separate dates of falls not recorded.
§ Data are from standard instruments not supplied by the U. S. Weather Bureau.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.
‖ Estimated by observer.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

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TABLE 2.—*Daily precipitation for December, 1910. District No. 11, California.*

Stations.	River basins.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Oregon.																																	
Klamath Agency	Klamath				.03													.10													.25	0.38
Klamath Falls	do			.27					.24	.18	.37	.01					.02									.10				T.		1.19
Lakeview	Pitt																																
Long Valley	do			.69					.64	.82	.52						.18	T.						.06			.05			.07		3.03
Merrill	Interior drainage		1.20						*	*	1.10						T.													T.		2.30
Yonna	do			.30					.40	.26	.60	.10					.10										.05			.05		1.86
California.																																	
Aguanga	Coast																			.05	.11											0.16
Alameda	do	.01	.03							.01	.15																					0.20
Alturas	Sacramento			.33	.05				.33	.93	.32	.09					.19										T.			.01		2.25
Anderson	do																																
Angels Camp	San Joaquin		.86					.07		.18		1.03																				2.14
Angiola	do			.25														.15				.20										0.60
Antioch	do		.10	1.00							.22	.70																				2.02
Aptos	Coast		.28	.45								1.12																				1.85
Arrowhead Springs	do																																
Auburn	Sacramento			.96	.46			.09		.04		1.75																				3.30
Avalon	Ocean											.07							T.	.95	.12					T.						1.14
Azusa	Coast										T.							T.		25												0.25
Bagdad	Desert																																0.00
Bakersfield	San Joaquin			.21														.07	.02	.24												0.54
Barstow	Desert			T.							.04																					0.04
Bear River	San Joaquin																																
Bear Valley (1)	Sacramento		2.24	1.24			.10		2.06	.24	1.94						.08															7.90
Bear Valley (2)	San Joaquin				.39						.05										1.35											1.79
Bear Valley Dam	Coast																	.96	.20													1.16
Ben Lomond	do				1.17						T.	2.34																				3.51
Berkeley	do			1.26			T.				.54																					1.80
Big Bar	Sacramento																																
Biggs	do			.95	.10					.05	.15	.42																				1.67
Bishop	Owens			.11								.11						.08														0.30
Bishop Creek	do			.50							.50	.20						.05	.90	.80	.40					.60						3.95
Blocksburg	Coast	.15	.32	1.17	.08				1.65	.68	.35	.08					.19								.08			.10			.15	5.00
Blue Canyon	Sacramento			2.05	2.10		.15	.15			.20	2.00	.20																			6.85
Blythe	Desert																																
Boulder Creek	Coast			.38	.72		.07				.04	1.04																				2.25
Bowmans Dam	Sacramento																																
Branscomb	Coast	.12	.39	1.66			.10		2.27	.47	.24						.14										.04			.20		5.63
Brawley	Desert																																
Brush Creek	Sacramento			2.20					.25	.65	.85	.36																				4.31
Burney	do		.17	.55					.72	1.27	.46	.06					.11															3.34
Butte Creek House	do																																
Butte Valley	do		.13	1.52	.13				.98	.98	.73	.36					.18														.03	5.04
Calexico	Desert																																0.00
Caliente	San Joaquin			.06	.16									.14																		0.36
Calistoga	Coast			.99						.75	.18	.40																				2.32
Campbell	do		.10	.20			.05				.34																					0.69
Campo	do																				.15											0.15
Camptonville	Sacramento		.16	2.30	.45		.07		.13	.50	.81	1.26																				5.68
Cedarville	Mountain lakes			.39					.72	.71	.58	.22					.10	T.									T.			.03		2.75
Chester	Sacramento		.11	1.43	.16				.44	1.05	.76	.33					.06															4.34
Chico	do		.08	.80			.01		.06	.03	.41	.38																				1.77
Chico (near)	do			1.04			T.		.11	T.	.68						.03															1.86
China Flat	Coast	.10	.68	.42					1.32	.73	.25						.39								.08			.06			.28	.31	4.62
Chino	do																				.38											0.38
Cisco	Sacramento			1.50	2.20			.45			.45	1.20						.10														5.90
Claremont	Coast										.02	.01								.27	T.	T.										0.30
Clear Lake	Klamath																																
Cloverdale	Coast			1.15					.11	.40																						1.66
Colfax	Sacramento			2.00	.82			.06		T.	.12	2.31						.04														5.35
Colgate	do			1.02	.46			.06	.01	.05	.09	1.39						.01														3.09
Colusa	do																																
Corning	do		.50	.16					.23	.25	.20																					1.34
Corona	Coast																	.15		.29												0.44
Crockers	San Joaquin																																
Cuyamaca	Coast										T.									.79	.21					.12						1.12
Daunt	San Joaquin			1.20								.61						.10	.40		.82									T.		3.13
Davisville	Sacramento																																
Deer Creek	do		.22	2.75	.04		.04		.09	.02	.90	1.85					.07															5.98
Delta	do		.20	1.62					1.15	.50	.74	.40					.03															4.64
Denair	San Joaquin				.01						.01																					0.02
Descanso	Coast																				.65						.15					0.80
Dinuba	San Joaquin	.74									.21									.25												1.20
Dobbins	Sacramento		.05	1.42	.01		.04	.01	T.	.01	.55	1.03					.02															3.14
Dorris	Klamath																																
Downieville	Sacramento		.20	2.33	.45		.10		.30	.70	.66	1.62					.15														T.		6.51
Dudleys	San Joaquin		T.	.92	.10		T.	.04			.18	.66									T.											1.90
Dunnigan	Sacramento			1.19	.13		T.				.11	.40																				1.83
Dunsmuir	do			1.50	1.03				.49	1.05	.47	.43																				4.97
Durham	do			.84			T.		T.		.84						T.									.04						1.72
Dyerville	Coast			.74	1.45				1.22	.20		.42											.20				.22					4.45
Edgewood	Klamath									.52	.41		.12																			1.05
Edison	San Joaquin			.29	.03						.02								.07	.42	.10											0.93
El Cajon	Coast																			.06	.27											0.33
Electra	San Joaquin		T.	.88	.04			.03			.50	.40																				1.85
Elsinore	Coast														.14																	0.14
Emigrant Gap	Sacramento			1.90		1.80		.50			.20	2.08																				6.48
Escondido	Coast																			.05	.11					.04						0.20
Eureka	do	.03	.08	.84					1.07	.17	.28	.01					.33				.03				.15	.01		.03	.07		.12	.20	.01	3.43
Fairmont	Coast																																
Farmington	San Joaquin		T.	.16	.28			.10			.10	.30																					0.94
Felton	Coast		.31		.88						.07	1.90																					3.16
Firebaugh	San Joaquin			.09							.01																						0.10
Folsom	Sacramento			.82	.58			.10				2.02																					3.52
Fordyce Dam	do		.63	3.20	.05		.12	.04	.10	.08	1.20	1.15					.05	.04													T.		6.66
Fort Bragg	Coast		1.05						.50	.60	.15																						2.30
Fort Ross	do																																
Fouts Springs	Sacramento																																
Fredalda	Coast											.05						.11		.11	.80											1.07
Fresno	San Joaquin			.12						T.	.06	T.								.01	.02											0.21
Fruto	Sacramento			.40	.20					T.	.20	.27																					1.07
Galt	San Joaquin			.70	.25							.60																					1.55
Georgetown	do			1.45	1.02		.02		.16	.01	.05	2.43	.10					.01															5.25

TABLE 2.—*Daily precipitation for December, 1910. District No. 11*—Continued.

Stations.	River basins.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
California—Continued.																																	
Gilroy	Coast			.20	.43						.04	.27										.03											0.97
Gilta	do	.30	.76	2.66	.06		.04		1.60	.52	.18	.06						.30						.02	.08			.06			.37		7.01
Glendora	do																																0.00
Glenn Ranch	do											.06								.03	.09						.03						0.21
Glennville	San Joaquin																																
Glenwood	Coast		.30	.59		T.				.08	2.00	.05																					3.02
Gold Run	Sacramento			1.50	1.20		.15			T.	.10	2.20																					5.15
Gonzales	Coast																																0.00
Grass Valley	Sacramento		.16	1.97	.13		.01	T.	T.	T.	.45	1.72					.03									.02							4.52
Greenville	do		T.	1.49	.06			.20	.70	.79	.90	.28					T.																4.42
Gridley	do			.99	.11						.15	.40																					1.65
Groveland	San Joaquin		T.	.98	.14			.04			.28	.43																					1.87
Guinda	Sacramento																																
Hanford	San Joaquin																																
Head Dam	Sacramento		.07	2.00	.04		.07		.08	.04	.60	1.56					.04																4.50
Healdsburg	Coast	T.		.82	.57				.05	.03	.14	.31																					1.92
Hearst	do	.30		1.50					.50		.20						.10																2.60
Heber	Desert																																0.00
Helen Mine	Coast			2.45					.45		.67																						3.57
Hesperia	Desert																																0.00
Holcomb	Coast																																
Hollister	do			.06	.36						.03	.07										.04											0.56
Hornbrook	do			.25					.50	.25	.25															.25				.25	.50		2.50
Hot Springs	San Joaquin			1.02						T.		.03							.17		1.02	.17											2.41
Hullville	Coast		.16	2.36			.03		1.03	.05	.34	.16					.08				T.										.07	.02	4.30
Idyllwild	do																				.10												0.10
Independence	Owens																																
Indio	Desert																																0.00
Inskip	Sacramento			2.58					1.27	.70	1.35	.55																					6.45
Ione	San Joaquin																																
Iowa Hill	Sacramento																																
Isabella	San Joaquin																																
Jacksonville	do			.06	.58						.16	.46	.08																				1.34
Jamestown	do			.77				.10			.43	.43																					1.73
Jenny Lind	do			.25	.46			.16			.04	.24	.06																				1.21
Johnsville	Mountain Lakes																																
Jolon	Coast			.10								.18																					0.28
Julian	do																				.65												0.65
Kennedy Mine	San Joaquin																																‡1.95
Kennett	Sacramento			.64	1.00				.40	1.20	.30	.80						.26															4.60
Kentfield	Coast			1.62	0.60						1.20		.48																				3.90
Kernville	San Joaquin			.30							.05									.39													0.74
King City	Coast																																0.00
Knights Landing	Sacramento		T.	.94	.10			.04			.04	.40																					1.52
Knob	do																																
La Grange	San Joaquin			.37							.30	.15																					0.82
Lake Eleanor	do																																
Lakeside	Coast															.50																	0.50
La Porte	Sacramento		.28	2.87	.15		.09		.78	.43	1.08	1.70					1.60														T.		8.98
Lathrop	San Joaquin			.20	.22			.05			.04	.38	.05																				0.94
Laurel	Coast			.35	.90							2.40	.10																				3.75
Laytonville	do																																
Le Grand	San Joaquin		.20							.08																							0.28
Lemon Cove	do			T.							.07	.21						T.			.52												0.80
Letter Box	Sacramento																																
Lick Observatory	Coast			.92		.02	.07						.76																				1.77
Livermore	do		.05	.72			.05	.02			.23	.25																					1.32
Lodi	San Joaquin		.08	.54			.07	.06			.38	.14																					1.27
Lone Pine	Owens			T.														T.	.04		.18					T.							0.22
Long Camp	San Joaquin						T.	2.50	T.																								2.50
Long Valley	Mountain Lakes		.13	1.21					T.	.06	.32	.31					T.	.39			.05												2.47
Lordsburg	Coast																				.28												0.28
Los Alamos	do			.03							.10								.20	.13													0.46
Los Angeles	do										T.	.04								.03						T.		T.					0.07
Los Banos	San Joaquin			.25							.22																						0.47
Los Burros Mine	Coast																																
Los Gatos	do		T.	.83			T.	.07			.30	.43										.10											1.73
Los Vaqueros	do																																
Lowe Observatory	do																																
Lytle Creek	do																																
McCloud	Sacramento		.14	1.04					.47	.18	.45	.11					.07														T.		2.46
Macdoel	Klamath			.48					.18	.24																					T.		0.90
Madeline	Mountain Lakes			.43		.05			.22	.90	.34	.30						.20							.10			T.			.20	.06	2.80
Magalia	Sacramento				.60			.37	.30	.34	1.02																						2.63
Mammoth Tank	Desert																																0.00
Mariposa	San Joaquin			.30	.28						.08	.18																					0.84
Marysville	Sacramento		T.	.50	.05					.01		.25																					0.81
Mecca	Desert																																0.00
Melones	San Joaquin			.18	.72			.18			.16	.54	.10																				1.88
Menlo Park	Coast		.30	.50							.45	T.																					1.25
Merced	San Joaquin			T.	.25				.08	.07	.10																						0.50
Merced Falls	do			.01	.30					.02	.12																						0.45
Mesa Grande	Coast										.01									.49	.05					.11	.02						0.68
Mill Creek (1)	San Joaquin		.29	1.49	.12		.03	.14			.59	1.81					T.																4.47
Mill Creek (2)	Coast																	.44		.35	.06												0.85
Mills College	do			1.11			.05				.34	.15																					1.65
Milo	San Joaquin			.58								.30									.48												1.36
Milton (near)	do			.48						.10	.29																						0.87
Modesto	do			.07	.20						.07	.22																					0.56
Mojave	Desert																	.10															0.10
Mokelumne Hill	San Joaquin		.11	.87			T.	.16		.14	.82	.02																					2.12
Mono Ranch	Coast			T.							.05	.19							.25	.39													0.88
Montague	Klamath			.40					.48	.25	.24						.06				.02				.04								1.49
Monterey	Coast			.22	.23							.10																					0.55
Monterio	San Joaquin			.32						.10	.02							.20	.40	.75													1.79
Montgomery Creek	Sacramento																																
Monumental	Coast																																
Morena Dam	do																																
Mount Tamalpais	do		.22	.96			.10	T.		.05	.63	.09																					2.05
Mount St. Helena	do																																
Napa City	do		1.01	T.			.05			T.	.37	.04																					1.37
Napa (S. H.)	do			.81	.22			.07			.07	.18																					1.30
Needles	Desert																			.07													0.75

TABLE 2.—*Daily precipitation for December, 1910. District No. 11*—Continued.

Stations.	River basins.	Day of month. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
California—Continued.																																	
Nellie	Coast																		.15	.63						.25	.22						1.25
Nevada City	Sacramento		.18	1.98	.05		.06			.03	.34	1.61	.02													T.							4.27
Newcastle	do		.05	1.28	.02		.07	.01	.01		.28	1.56	.01				.02																3.31
Newhall	Coast										.27																						0.27
Newman	San Joaquin				.28	T.					.06	.17																					0.51
Nimshew	Sacramento		.24	1.38	.03		.03		.74	.17	.83	.44				.04																	3.90
North Bloomfield	do																																
North Fork	San Joaquin			.70	.13						.19	.85									.19												2.06
North Lakeport	Coast	.05	.40	.70				.09	.02																								1.26
Oakdale	San Joaquin			.11	.20						.07	.39																					0.67
Oak Grove	Coast																				.19												0.19
Oakland	do		.03	1.23	.01		.02				.44	.24	.01	.01			.01																2.00
Oakville	do	.90	.40								.12	.40																					1.82
Oceanside	do										.02							.07		.28	T.												0.37
Ojai Valley	do			T.								.15								.18						.02							0.35
Orland	Sacramento		.48	.14	.01			.06		.22	.29																						1.20
Orleans	Klamath	.31	.64	1.28			.03	.86	.98	.50	.06					.32						.09					.14			.14			5.35
Oroville	Sacramento		.80	.25				.09		.10	.53																						1.77
Ozena	Coast			.15							.17	.33	.35																				1.00
Palermo	Sacramento			1.05							.60																						1.65
Palm Springs	Desert																																0.00
Parkfield	Coast			.16								.30									.22												0.68
Pasadena	do											.05						.04		.06													0.15
Paso Robles	do				.10							.32								.15	.05												0.62
Peachland	do		.04	1.45	.01		T.		.01	.02	.40				.03																.02		1.98
Penstock Camp	San Joaquin																																
Peyton	Sacramento																																
Phoenix Dam	San Joaquin																																
Pilot Creek	Sacramento			2.15			.27			T.	1.08	1.63					.04																5.17
Pine Crest	Coast				T.						.05	.15	.02						T.	.13	.78						.07						1.20
Pittville	Sacramento																																
Placerville	do			.98	.46		.10	.34		.03	.07	2.32																					4.30
Point Lobos	Coast		.04	.74			T.				.66	.29	T.																		T.		1.73
Point Loma	do				.01	.01					.01	T.		T.	.01				.11		.20		.01	.01	.01	T.	.02						0.40
Point Reyes	do		.20	.40			.10	T.		T.	.57	.02																			.03		1.32
Pollasky	San Joaquin					.24															.10	.02											0.36
Porterville	do				.36					.10	.06			.01						.50													1.03
Priest Valley	Coast			.20								.32								.06													0.58
Quincy	Sacramento		.10	1.30	.10		T.		.70	1.50	.65	.47	.10																				4.92
Red Bluff	do		.11	.47					.46	.17	.53						.04																1.78
Redding	do		.15	1.07					1.15	.74	.30	.09					.10																3.60
Redlands	Coast			T.							T.	T.						.55		T.	.12					T.							0.67
Reedley	San Joaquin			T.							.11			.25																			0.36
Represa	Sacramento		.77	.52		.03				.02	2.02																						3.36
Rialto (near)	Coast										.01	.01								.14	.02	.01											0.19
Rio Vista	Sacramento			1.18	.28		.01	.10	T.	T.	.08	.66	.01																				2.32
Riverside	Coast											.02						.01		.01													0.04
Rocklin	Sacramento			1.25						T.		1.20																					2.45
Rohnerville	Coast		T.	1.00	T.			T.	.90	.30	.18						.46								.17			.16	.29			.07	3.53
Sacramento (1)	Sacramento		.18	.72			.06			.02	.34	.30																					1.62
Sacramento (2)	do		.14	1.05	.01	.01	.05			T.	.45	.35			.02																		2.08
St. Helena	Coast			1.12							.40	.33																					1.85
Salinas	do			.17	.35						.02	.03										.04											0.61
San Bernardino	do											.01								.02													0.03
San Diego	do																		T.	.14	.01												0.15
San Francisco	do		.16	.84			T.			.09	.57	.07																					1.73
San Jacinto	do																																0.00
San Jose	do		T.	.41		.01	.01			.02	.20	.01									.01	.01											0.68
San Leandro	do		.97	.11			.02			.08	.40																				T.		1.58
San Luis Obispo	do			.13	.01						.53	.24							T.	.04	T.												0.95
San Mateo	do			.65	.30			.03			.10	.51	.01									.04											1.64
San Miguel	do			.18							.12										.26												0.56
San Miguel Island	Ocean																																
Sanger	San Joaquin																																0.20
Santa Ana River	Coast																	.80		.22	.07												1.09
Santa Barbara	do				T.						.06	.07	.05						T.	.05	.52					T.							0.75
Santa Clara	do		.02	.44			.05				.21	.15										.13											1.00
Santa Cruz	do				.70							1.10																					1.80
Santa Margarita	do			.03								.58								.10													0.71
Santa Maria	do			.15							.10									.20													0.45
Santa Monica	do										.05									.17						.06							0.28
Santa Rosa	do		.05	1.22	.02	T.	T.	T.	.01	T.	.38																						1.68
Sausalito	do			.95							.96																						1.91
Selma	San Joaquin			.32							.07										.08												0.47
Seven Oaks	Coast										T.							.70		.40	T.												1.10
Shasta	Sacramento		.06	.11				.24	1.34	1.26																							3.01
Shingle Springs	San Joaquin			.70	.55			.20				1.15																					2.60
Sierra Madre	Coast			T.							T.	.01						.13		.17	T.												0.31
Sierraville	Mountain Lakes		.45	1.45								.70						.20															2.80
Sisquoc Ranch	Coast																		.40	.15													0.55
Sisson	Sacramento		.18	.80				.03	.81	.19	.61						.05																2.67
Soledad	Coast																																0.00
Sonora	San Joaquin			.73	.01			T.			.30	.65																					1.69
Southeast Farallones	Ocean		.22	.51			.04			.01	.40	.02					T.				.30												1.20
Spreckels	Coast			.09	.35						.02	.04																					0.50
Squirrel Inn	do										T.							.06		T.	.46			T.									0.52
Stirling City	Sacramento		1.30	.80			T.		1.00	.50	1.40	T.																					5.00
Stockton (S. H.)	San Joaquin		.03	.45	.21			.08			.33	.21																					1.31
Storey	do			.21							.05																						0.26
Suisun	Sacramento			.02					.01	.01																							0.04
Summerdale	San Joaquin			.81							.38	1.24									.01												2.44
Summit (1)	Sacramento		T.	2.30				.20	.18	.10	.70	.20						.40															4.08
Summit (2)	Coast																																
Surrey	do			T.							.06	.18							.12	.09													0.45
Susanville	Mountain Lakes			.85	.20				.25	.98	.41	.26					.11																3.06
Tamarack	Sacramento		.40	1.80			1.00	1.20	.50	.55	.50	.40	.20					.20	.80							.80							8.35
Tehachapi	San Joaquin																			.40	.43												0.83
Tehama	Sacramento			.35					.16	.08	.28	.50																					1.37
Three Rivers	San Joaquin			.73							.07	.31						.07			.26	.12											1.56
Towle	Sacramento			1.72	1.60			.05			.11	2.20																					5.68
Tracy	San Joaquin	.06		.05	.05						.10	.15		.01																			0.42
Tulare	do			.15							.26										.32												0.73

TABLE 2.—*Daily precipitation for December, 1910. District No. 11*—Continued.

Stations.	River basins.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
California—Continued.																																	
Tustin (near)	Coast												T.								.75	T.											0.75
Ukiah	do		.10	1.32			.03		.12		.20						.02														.01		1.80
Upland	do											.02								.21						T.							0.23
Upper Lake	do		.11	1.11					.11		.33	.05																					1.71
Upper Mattole	do	.57	1.59	.87	.02				.87	.52	.19	.18					.02	.15			T.	.01			.02			.22		.03	.14	.10	5.50
Vacaville	Sacramento		.80	.40			.06			.08	.46																						1.80
Valley Springs	San Joaquin			.33	.39						.20	.36	.06																				1.34
Ventura	Coast																																
Visalia	San Joaquin										.50										.21												0.71
Warner Springs	Coast																			.45	.02					.02							0.49
Wasco	San Joaquin																				.70												0.70
Watsonville	Coast		.26	.47							.62	.09																					1.44
Weaverville	Sacramento		.12	.48	.12	.99			.33	1.01	.34																						3.39
Weitchpec	Klamath	.20	.22	2.67	.27	.04	.07	.02	1.76	.42	.18	.05					.54							.04	.10			.23			.33		7.14
West Branch	Sacramento		.14	2.03			.03		1.15	.42	.93	.69					.02																5.41
Westley	San Joaquin			.12		.08						.25																					0.45
West Point	do		.70	.84				.12				1.79	T.							.04													3.49
West Saticoy	Coast										.20									.10						.05							0.35
Wheatland	Sacramento		.14	1.01		.04				.01	.42	.15					T.																1.77
Willows	do		.08	.60			.01			.04	.41	.04									T.												1.18
Woodleaf	do																																
Yosemite	San Joaquin			1.14				.01			.28	.23																					1.66
Yucaipe	Coast																																

TABLE 3.—*Maximum and minimum temperatures at selected stations, December, 1910. District No. 11, California.*

Date.	Lakeview Oreg.		California.																							
			Alturas.		Barstow.		Branscomb.		Brawley.		Colusa.		Eureka.		Fresno.		Independence.		Los Angeles.		Mount Tamalpais.		Nevada City.		Porterville.		Red Bluff.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1			61	27	72	34	50	40	79	41			65	47	68	41			79	58	63	54	73	29	70	48	58	36
2			49	32	75	35	51	46	77	39			63	56	60	42			79	55	56	50	52	29	71	47	53	47
3			46	33	87	37	51	43	75	41			59	49	57	48			70	55	50	42	48	41	63	48	60	47
4			45	26	71	45	53	39	81	41			59	46	51	44			69	53	49	39	59	29	54	49	56	44
5			48	24	73	33	51	31	78	43			55	42	56	46			83	58	49	42	56	26	59	47	54	37
6			49	25	81	33	51	39	77	36			61	43	63	46			76	56	54	47	52	34	65	42	56	40
7			47	25	72	35	54	36	78	38			56	43	62	45			74	54	55	45	59	35	71	41	56	40
8			*44*	*31*	*70*	*35*	*51*	*41*	*78*	*40*			*56*	*51*	*70*	*45*			*80*	55	57	50	*56*	46	72	43	50	47
9			43	31	71	35	53	48	77	38			51	49	66	48			77	58	63	49	61	46	70	42	54	49
10			44	34	60	35	55	50	74	40			57	49	64	54			65	54	51	48	54	47	70	52	57	52
11			44	37	73	39	60	40	78	46			53	51	69	50			64	52	49	47	57	41	68	54	62	49
12			53	26	74	34	63	35	77	47			51	48	55	45			68	46	55	47	66	33	62	40	67	46
13			54	24	71	30	67	36	77	43			48	44	51	45			73	45	59	46	67	30	59	42	64	42
14			56	23	72	34	67	40	77	43			54	45	52	46			77	53	60	48	65	29	58	49	60	40
15			55	24	71	31	67	43	78	42			59	52	48	45			80	56	57	49	70	28	48	41	54	40
16			44	25	78	32	53	40	74	40			56	45	48	43			81	55	56	40	52	29	47	43	48	42
17			40	29	65	35	64	30	72	32			52	43	49	40			64	49	51	36	55	25	56	35	61	41
18			44	20	67	35	71	32	67	40			61	40	56	34			63	48	56	46	67	30	58	38	66	49
19			49	16	66	33	67	35	70	35			53	42	58	35			55	47	57	43	74	28	59	39	66	42
20			47	20	61	36	60	36	66	47			53	46	55	46			60	43	45	39	54	27	58	40	48	36
21			38	26	64	38	61	32	66	46			50	41	56	41			62	49	46	37	55	26	58	44	57	36
22			41	19	62	30	60	29	69	35			52	39	60	35			65	46	51	41	58	27	59	37	60	34
23			49	20	69	28	62	39	71	33			56	42	59	36			77	51	51	44	64	28	61	35	56	36
24			39	29	61	30	54	33	69	33			50	41	59	33			68	47	49	42	57	30	59	34	59	39
25			38	26	70	39	57	28	62	33			52	39	55	38			59	50	49	40	53	27	60	35	58	46
26			46	14	66	40	58	29	65	40			53	36	58	30			63	44	54	42	60	24	58	36	59	39
27			41	24	61	32	54	30	66	34			49	39	55	33			60	45	44	37	52	26	56	32	56	36
28			44	13	70	25	63	27	65	35			50	34	54	30			64	43	50	42	60	22	58	30	62	39
29			40	22	60	23	49	21	67	32			54	41	54	34			72	42	49	39	50	26	59	30	48	36
30			36	26	57	24	42	29	65	33			52	40	56	28			64	45	42	35	54	25	55	29	55	35
31			34	19	64	34	47	28	66	28			49	37	50	32			61	42	41	34	51	20	52	32	55	32
Mns.			45.4	24.8	68.8	33.5	57.0	35.8	72.3	38.5			54.5	43.9	57.2	40.6			69.4	50.1	52.2	43.2	58.4	30.4	60.5	40.5	57.3	41.1

Date.	California																									
	Redlands.		Sacramento.		San Diego.		San Francisco.		San Jose.		San Luis Obispo.		Santa Barbara.		Santa Rosa.		Sisson.		Stockton.		Summit.		Susanville.		Yosemite.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	82	48	65	38	70	49	62	48	70	34	76	47	77	50	64	30	50	30	56	34	49	28	47	25	44	25
2	83	46	52	47	69	51	57	51	55	45	79	47	76	47	57	50	55	33	52	36	38	30	55	30	46	26
3	74	46	55	45	64	53	59	51	64	45	58	46	71	45	60	50	50	36	54	47	37	32	46	35	49	33
4	72	40	55	37	62	50	57	45	57	40	63	50	68	44	64	37	48	27	57	37	38	18	43	27	46	27
5	79	45	50	37	61	50	55	47	57	36	76	45	74	47	60	33	48	29	56	35	38	19	40	24	49	27
6	76	42	52	45	66	43	56	49	63	46	70	44	77	44	57	42	45	24	54	44	40	29	41	26	53	31
7	76	42	55	41	69	50	59	50	60	47	71	45	70	45	58	40	46	31	57	44	43	32	43	26	54	38
8	81	44	61	49	72	55	62	52	69	45	71	45	76	47	57	51	46	37	57	46	42	37	51	32	53	30
9	80	46	59	50	73	56	65	53	68	50	79	48	72	49	56	50	47	40	62	46	45	37	48	42	58	31
10	67	47	58	51	65	52	58	53	63	53	62	54	65	51	58	52	47	35	60	42	43	35	47	41	55	39
11	64	48	63	52	65	55	60	53	65	49	62	49	64	53	56	47	51	30	58	50	44	32	50	36	55	39
12	76	40	63	42	61	53	59	47	61	43	72	46	68	45	66	37	42	26	56	48	40	29	47	31	50	26
13	75	41	59	38	66	48	65	48	68	36	78	41	73	43	64	35	56	22	52	42	38	22	45	33	48	22
14	75	42	47	43	70	47	57	47	62	37	77	37	76	43	54	38	53	25	50	42	48	22	41	25	48	20
15	75	41	46	42	74	52	55	45	59	38	69	60	70	42	50	41	52	31	50	42	48	30	41	26	51	21
16	76	43	47	42	73	53	59	43	54	37	70	56	76	42	58	42	38	28	49	42	35	25	41	28	44	23
17	62	39	61	35	60	49	62	43	61	39	56	47	64	43	65	32	42	28	53	37	30	20	40	28	59	20
18	63	36	66	43	58	49	68	53	65	38	58	49	62	44	74	47	52	25	48	33	34	20	40	21	50	20
19	68	38	54	36	59	46	61	47	64	34	58	48	60	48	60	30	52	20	50	31	37	19	37	30	55	29
20	50	38	54	38	58	47	55	50	56	42	54	43	62	41	58	38	47	26	54	37	41	24	45	25	54	30
21	58	42	54	41	57	46	57	47	56	40	56	46	62	42	58	36	49	22	48	41	39	19	41	24	51	22
22	64	35	54	35	64	43	59	46	58	34	62	48	65	41	62	32	52	28	50	36	44	25	40	22	49	21
23	74	40	55	37	69	46	58	46	60	33	73	40	70	42	58	32	48	32	50	34	48	30	37	23	49	21
24	68	39	57	38	63	46	56	47	57	35	63	39	64	41	61	36	39	24	52	34	45	29	42	26	51	22
25	56	38	61	33	57	50	60	44	58	31	58	39	61	47	63	32	38	22	50	32	29	18	38	21	51	22
26	59	36	56	36	58	45	58	46	61	29	62	34	62	40	61	29	45	24	47	29	38	13	36	17	48	16
27	*56*	*28*	55	*36*	*59*	*43*	*56*	*45*	*56*	*33*	*57*	*33*	*60*	*40*	61	31	38	*19*	*52*	31	29	18	41	19	50	15
28	65	33	55	34	60	40	58	44	61	32	60	42	63	36	62	26	40	23	50	26	36	16	36	15	49	15
29	69	35	51	39	68	41	52	44	55	34	62	35	67	40	54	30	40	30	48	34	35	24	45	21	47	18
30	64	35	53	32	62	43	55	43	55	31	59	33	65	36	56	30	41	29	48	28	33	25	42	28	45	16
31	56	36	55	34	58	44	56	44	52	28	55	42	68	38	55	28	49	28	54	28	35	22	37	13	50	15
Means	69.1	40.6	55.7	40.2	64.2	48.3	58.6	47.5	60.3	38.5	65.5	44.5	68.0	43.7	59.6	37.5	46.6	27.7	52.6	38.0	39.3	25.1	42.7	26.5	50.2	24.5